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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jun Koyama et al. Art Unit : Unknown
 Serial No. : Unassigned Examiner : Unknown
 Filed : August 8, 2001
 Title : LIQUID CRYSTAL DISPLAY DEVICE, METHOD OF DRIVING THE SAME,
 AND METHOD OF DRIVING A PORTABLE INFORMATION DEVICE
 HAVING THE LIQUID CRYSTAL DISPLAY DEVICE

Commissioner for Patents
 Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows:

In the claims:

Amend claims 2-4, 6, 7-10 and 13-29 as follows:

2. The liquid crystal display device of claim 1, wherein each of said pixels has n (n is a natural number equal to or greater than 2) memory circuits and the D/A converter associated with a pixel is configured to convert into analog signals digital signals stored in said n memory circuits associated with the pixel.

3. The liquid crystal display device of claim 1, wherein each of said pixels has a liquid crystal element that receives as input the analog signals generated by the associated D/A converter.

4. The liquid crystal display device of claim 1, wherein each of said pixels has $n \times m$ (n and m are both natural numbers equal to or greater than 2) memory circuits and the D/A converter associated with a pixel is configured to convert into analog signals n bit digital signals stored in said $n \times m$ memory circuits associated with the pixel.

6. A liquid crystal display device according to claim 1, wherein said memory circuits and said D/A converter are arranged so as to overlap a source signal line.

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